DOCUMENT RESUME

ED 277 442 JC 870 072

AUTHOR Kelly, Diana
TITLE Adult Learners: Implications for Faculty.
PUB DATE 11 Dec 86
NOTE 48p.; Graduate seminar paper, Claremont Graduate School.
PUB TYPE Viewpoints (120) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Adult Education; *Adult Learning; Adult Programs; *Adult Students; *Andragogy; College Faculty; Community Colleges; Curriculum Development; Higher Education; Learning Motivation; Learning Strategies; Program Development; Student Characteristics; *Teaching Methods; Two Year Colleges
IDENTIFIERS *Fullerton College CA

ABSTRACT

Drawing from a review of the literature, this paper explores the role of university and community college faculty in teaching the growing number of adult students and potential adult students. First, section I offers background on the growth in adult enrollments at Fullerton College (California). Next, section II profiles the adult college student, exploring the social, psychological, and demographic characteristics of the adult learner; barriers for adult learners; the motivations of adult learners; and the implications of these characteristics for college educators. Section III reviews studies of adult learning, exploring the learning capacity of adults and their preferences for highly structured instruction, innovative learner-centered activities, and relevant content. Adult learning theories and teaching methods are highlighted in section IV, touching on the andragogical use of self-directed learning, learning contracts, structured inquiry, competency-based education, and experiential learning. Section V focuses on teaching techniques for adult students. It begins by posing some philosophical and practical questions about how adults should be taught, and then offers guidance for using andragogy in teaching, utilizing methods which require active participation, facilitating discussion, and teaching students to teach themselves and others. This section also includes a discussion of the special aspects of corporate training programs. Finally, section VI presents a summary and recommendations. (EJV)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED277442

Adult Learners:
Implications for Faculty

Diana Kelly
Communications Division
Fullerton College
Fullerton, California

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
D. K. Kelly

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☒ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

JC 870 072

submitted to:

Education Department
Claremont Graduate School
December 11, 1986

BEST COPY AVAILABLE

Adult Learners: Implications for Faculty

I. Introduction

A. Statement of the Problem

I began research for this report with two assumptions: 1. Fullerton College has a rapidly growing number of adult students; 2. Faculty members should learn more about the adult students in order to better facilitate a good learning experience for the adults. I was somewhat surprised to learn that the number of adult students age twenty-five and older had actually decreased between 1980 and 1986 from 7457 to 6720. The percentage of adults in the total student population had also decreased slightly: 39 percent in 1980 and 38 percent in 1986 (Fullerton College, 1980, 1986). Several institutional changes which occurred between 1980 and 1986 may have had an effect on the adult student population: the elimination of satellite campus locations within the community, the mandatory English and Math placement tests for all students who have not earned at least an A.A. degree, and the new fifty dollar tuition fee.

However, nationally the statistics show steady growth in adult college enrollment. In spite of the institutional changes, our adult enrollment should also be increasing. I started to wonder if we are doing something wrong at Fullerton College. Could it be that adults are not aware of our programs? Or is it possible that the adults intend to take classes at Fullerton College but are inhibited by the red tape of entrance testing and registration? I'm concerned with these aspects of Fullerton College, but as a faculty member I'm even more concerned with a third possibility: perhaps the adults are actually enrolling in classes but are not comfortable with the teaching methods. If the adult students are not satisfied with their classroom experiences they may choose not to finish the course, or may finish the course but choose not to return the following semester. My purpose in researching this topic has not changed. I believe that it is important for instructors of adults to know how adults learn. However, now I am also concerned about the lack of growth in the adult student population of Fullerton College.

B. Thesis

The purpose of this paper is to explore the role of the university and community college faculty in teaching the growing number of adult students and potential adult students. In order to do this, the following questions must be addressed:

- What are some of the characteristics and motivations of adult students which make them different from traditional-age students?
- What are some of the adult learning style preferences?
- What are the theories of adult learning?
- Which teaching methods utilize the adult learning theories?
- How are the adult learning theories applied to curriculum design?
- Which teaching methods are used to train adults in the corporate setting?
- Could corporate training methods be adapted for use in higher education?
- Do faculty members need retraining to effectively teach adult students?

My thesis is that faculty of colleges and universities may need retraining to more effectively teach the growing number of adult students. Through an examination of the literature I plan to show that it is possible that adult students are so sufficiently different from traditional-age students that colleges and universities may need to consider a program of retraining for faculty members. I will also examine the possibility that some of the teaching methods used in corporate training may lend themselves to the traditional college setting.

II. Profile: The Adult College Student

A. Characteristics of the Adult Learner

1. Statistics and Demographics of Adult Students

Why should colleges or college faculty be concerned with learning more about the adult student? Statistics show that nationally the adult student population is increasing. More than twenty million adults participated in some form of organized educational activity in 1981, three million more than in 1978 (Cetron, 1985), and eight million more than 1969 (Naisbitt & Aburdene, 1985). This figure represents four times the number of full-time college students (Naisbitt & Aburdene). The 1980 U.S. Census Bureau report shows that one in three college students is now over twenty-five years old. (Magarrell, 1981). Seventy-two percent of the adult students surveyed in another study were between the ages of twenty-five and thirty-four years of age. (Sewall, 1986). A study of the older adult population shows that 50 percent of the fifty-year-old men and 58 percent of the fifty-year-old women had recently taken a class. Twenty-four percent of the men and 35 percent of the women in the seventy-year-old age group had taken a class (Russ-Eft, 1980).

Faculty and administration of community colleges should be particularly interested to know more about the adult college student because the majority of adult students attend community colleges and a few large universities (Astin, 1984). According to the AACJC, the mean age of students enrolled for credit in community colleges in 1980 was twenty-seven (Cohen, 1982). The most recent population figures for Fullerton College show that 38 percent of the total student population is age twenty-five or older (Fullerton College, 1986). The National Center for Education Statistics (NCES) projects that by 1990 students over the age of twenty-five will account for 47 percent of the total student population (Frankel & Gerald, 1982). The NCES also shows a probable decline in the number of students aged twenty-five to twenty-nine by 1993, but an increase in the percentage of students aged thirty and over. These students will represent one out of every three college students by 1993 ("College Enrollment," 1986).

2. Social and Psychological Differences of Adult Students

There are many differences between the characteristics of the adult college student and those of the traditional age college student. The most obvious difference is age, but other differences are

a result of the difference in age: gender, socio-economic group, previous education, work and family responsibilities, barriers to attending college, and motivations for attending college based on life cycles and developmental stages.

Women have constituted the fastest growing segment of adult students. Solmon and Gordon (1981) and Fisher-Thompson and Kuhn (1981) found more adult women than men enrolled in post-secondary institutions. The Fullerton College enrollment statistics for Fall 1986 show a fairly equal number of male and female students overall. But in comparing students over the age of thirty-five, there are nearly double the number of females (1,744) than males (927). These figures are similar to those found in Sewall's study (1986) in which he found that female students over the age of thirty-five outnumbered male students over thirty-five nearly three to one.

The socio-economic group of adult students is different from that of traditional age students. Adult students are likely to be from a working class background and are likely to be first generation college students whose parents did not attend college (Cross, 1981). The largest group of adult students are professional and technical workers. Clerical workers are next, and managers and administrators are third in the number of courses for which they enrolled (Eurich, 1985).

Family responsibilities are much greater for adult students. Sewall's study of adult students (1986) revealed that 63 percent were married and 62 percent had children.

Because of greater work and family responsibilities than traditional age students, adults have less time for classes. One study showed that adult degree-seeking students are more often employed while enrolled in college and work more hours during the week than traditional age students. Over 82 percent of the traditional age students were enrolled full-time, but 50 percent of the degree-seeking adult students surveyed were enrolled in less than eight hours of credit (Iovacchini, Hall & Hengstler, 1985).

As the age of students has increased, the number of credit hours per student has decreased. In community colleges, the percentage of part-time students increased from 48 percent in the early 1970's to 63 percent in 1980 (Cohen). At Fullerton College the majority of students are now working full-time and attending classes part-time (Taylor, 1986). So not only is the student body getting older, but the students are on campus fewer hours and have many more outside responsibilities than the traditional student body of the past.

3. Educational Background of Adult Students

The educational attainment of adults in the general population is different for each age range of adults. Generally, the older generation has completed fewer years of formal schooling than the younger generation. In 1970 the median number of school years completed was 12.6 for twenty-five to twenty-nine year olds, 12.1 for forty-five to fifty year olds, and only 8.8 for sixty-five to seventy-five year olds (Parelius, 1979). Patricia Cross (1983) quotes the following U.S. Census Bureau statistics: 84 percent of today's 20-24 year olds have completed four years of high school; aproximately two thirds of their parents (age 45-49)have completed high school; but only 38 percent of their grandparents' generation (age 70-74) have graduated from high school. The implications are that there may be a great discrepency in the educational attainment of adult learners of different age groups.

Several studies show that the adults who enroll in college classes are likely to have completed a college degree. In one study the statistics showed that over 40 percent of all participants in college-sponsored adult education already hold a college degree (Anderson & Darkenwald, 1979). According to another study, 41 percent of the adult learners take graduate level courses (Williams, et al., 1981). Sewall's study (1986) showed that 58 percent of the students surveyed had attended some college in the past. The implications are that the smart are getting smarter, and the educational gap between the various socio-economic groups may become a chasm.

A study of adult college graduates pursuing further education showed the following profile: over thirty, equally male and female, likely to be earning less than $15,000 per year, likely to have graduated from college five years or more previously, more likely to have completed their degree in the sciences or in education, likely to be working in education, and likely to be dissatisfied with their present salaries (Graham, 1985). Another study of college graduates who were part-time students at colleges and universities show a somewhat different student profile: more likely to be female, between the ages of twenty-five and thirty-four, married, without children, working full time with a salary between $15,000 and $20,000, and likely to be a teacher (Anderson & Darkenwald, 1979).

4. Life Experience of Adult Learners

Life experiences of adult students are a great resource in learning. Adults can find more

relevance in their classes than younger students because of experiences in their careers or personal lifes. For this reason adults find it easier to transfer concepts into practical activity than do younger students. Younger students are "theory rich but experience poor" (Greenberg, 1980). Experience is a rich resource for adult learners which allows the analysis of life experiences rather than simply learning the theory of a subject (Knowles, 1978). Instructors of adults can take advantage of the rich life experiences of adults in class discussion because adult students can make the material more meaningful. In talking about the effects of television on children in my classes I usually find that the adult women in the class have relevant observations to contribute because they have children of their own who watch television. Instructors of adults may acknowledge the importance of the life experiences of adult college students by encouraging adults to give examples from their own experiences or observations.

Generally life experience is an asset, but occasionally previous experiences can cause difficulties in learning (Knowles, 1973). Adults usually have established methods of problem-solving and decision-making which may need to be "un-learned." Adults bring certain preconceived ideas, attitudes, and prejudices to the learning experience which may hinder the learning process. In skills training, adults may have out-moded methods of completing projects. In such instances, the instructor must be sensitive to the previous experiences to help the adult student to first be aware of the changes in practice before attempting to teach the new method.

B. Barriers for Adult Learners

Although the number of adult students is increasing, there are more adults who want to attend college but are prevented from doing so. Three major types of barriers which may prevent adults from attending college are situational barriers, institutional barriers, and dispositional barriers (Cross, 1981). Situational barriers are those which arise out of the situation of the adult at a particular time and may include the costs of attending college, hours spent working, and family responsibilities. Sewall's study (1986) shows that those three factors combine to account for 59 percent of the most pressing reasons for delaying entry to college. Institutional barriers may include the course offerings, the times at which courses are offered, the length of the semester, the methods of registration and other administrative red tape, academic standards for enrollment, lack of marketing of programs, and poor attitudes of faculty and administration toward adult college students. Dispositional barriers are those imposed on the student by the student:

poor time management, poor study skills, low self esteem, boredom, lack of curiosity, lack of energy, and fear of going to college (Iovacchini et al.). It is possible that some of these barriers are the same ones which may prevent unenrolled eighteen to twenty-two year olds from attending college as well.

In another study, adult college students who were surveyed stated that they had anticipated the problems of coordinating work, family and school before deciding to return to college (Preston, 1976). The general consensus of these adults seemed to be that there was an awareness of the possible time conflicts before they came back to college, and they came back to college knowing that they would be able work out any difficulties.

C. Motivations of Adult Learners

1. Career Enhancement

One of the major differences between younger students and adult college students is a sense of purpose. Younger students may be attending college because of parental pressure or peer pressure. Adults are attending college voluntarily at some cost to family life and leisure time, in addition to the actual cost of tuition and books. The most prevalent motivation for adults to come back to college is career enhancement. Studies project that people will need to be retrained several times during their working years because they will make career changes three or four times (Cetron). Knowles (1979) states that career changes will average eight times for one's typical career. Other projections from various government offices state that between 2 and 3 percent of the nation's labor force may need to be retrained each year ("Change in America", 1986). Much of the retraining is due to the Information Society which is now a reality. The need for workers with skills learned primarily through formal education is greater than it has ever been. Today 50 percent of all jobs require workers to handle information (Cross, 1983). Some workers will simply need to update their skills to cope with new technology, and others will need to be trained for entirely new careers as old ones disappear.

2. Motivational Typology

The motivations of adult learners seem to vary according to their needs. According to Cyril Houle (1961), there are three types of adult learners: the goal-oriented learners who plan to accomplish a clear cut objective, the activity-oriented learners who seek social contact, and the

learning-oriented learners who enjoy learning for its own sake.

In Sewall's (1986) survey of adult college students, 65 percent said they enrolled "to develop a new career", 62 percent enrolled "simply to learn", and 51 percent "to have the satisfaction of having a degree." Hu (1985) had similar results in a survey of adult students. At the top of the list of "Important Reasons for Taking Courses," 44 percent of current adult students ranked "Need Academic Credentials for Career Advancement." In a study comparing traditional college age students with older degree-seeking students, Iovacchini, Hall, and Hengstler (1985) found that both groups were primarily motivated by the idea of obtaining a higher level occupation with better pay. The clear motivation for a rewarding career with good pay shows that a majority of adults are goal-oriented by Houle's definition.

Morstain and Smart (1977) developed another method of categorizing the motivations of adult college students. The adults were placed into five different groups, each with a different motivational profile. Scores from Boshier's Educational Participation Scale (EPS) were used to develop these profiles. The "non-directed learner" had no particular motivation for attending college, and no specific goal or purpose. This group sounds very much like some of the traditional age college students who are attending college only because of parental pressure. The second group was the "social" group: enrolled in college primarily for social interaction and for humanitarian or service projects and classes. The third group were the "stimulation-seeking" adult students. Their primary motivation was to escape the boredom of everyday life: boredom with a job, or boredom with personal life. These students were looking for new experiences and intellectual stimulation. Group four included those who were "career-oriented learners." This group was primarily attracted to classes or activities which had a direct application to their present job or a future job interest. The fifth group was called the "life change" learners. This group was almost the exact reverse of the first group because they were motivated for several different reasons. The "life change" learners felt a need to improve several different aspects of their present life: career enhancement, intellectual stimulation, breaking the monotony, and socializing. There were far more female adult students who were attending college for "stimulation seeking" reasons, and somewhat more "non-directed" and "social" female students than male. There were more male adults who fit the "career oriented' and "life change" profiles than female students (Morstain & Smart).

3. Life Cycles

The reasons and motivations for returning to college may also vary according to life cycle stages. According to a study of students who enrolled in an external degree program at Goddard College (Weathersby, 1977), the motivations for attending college for students in their twenties were mainly career advancement and reaping the benefits of having a degree. During the thirties transition period adult students were coming back to college to finish degrees because children were now older, for professional advancement, or to seek redirection in work or personal life. Students in their thirties and forties were somewhat more motivated to actually finish the degree in order to move ahead in a career or to make more money to support a family. The thirties and forties adult students also expressed a desire to satisfy intellectual curiosity. In the forties mid-life transition period students wanted to find more meaningful work or realize a long-deferred dream. At the fifties transition adults expressed a desire to regain direction after crisis, to start some new work, and to pursue long-valued interests and goals. And at the later adulthood stage, adults over the age of 50 had primarily personal goals which motivated enrollment.

Weathersby's life cycle stages are highly generalized. Adults who don't fit into these age categories and stereotypes may have motivations in their twenties which are similar to those Weathersby says are characteristic of adults in their fifties. People are getting married later or not at all. Couples are choosing not to have families, or are starting families later. So many adults may not be in sync with Weathersby's categories. Another theory of life cycles is the "fluid life course" in which life events may overlap or may be out of sync with the prescribed pattern shown by Weathersby and other theorists (Schlossberg, 1984).

Life cycles also involve critical periods which may or may not occur within the age periods listed in Weathersby's study. Marriage, the birth of a child, loss of a spouse or divorce, loss of a child or close relative, entry into employment or loss of employment represent some of the critical periods in the life of an adult (Knowles, 1978). Any one of these critical life periods might prevent an adult from going to college, or might motivate an adult to attend college. Zemke and Zemke (1981) support the theory that adults are more likely to seek out learning opportunities as they encounter life-changing events. Adults coping with critical events are motivated to seek answers through education. Critical life periods are a time of reassessment and readjustment during which an adult might choose to attend college in order to start a new direction

in life. Some of the needs may be psychological, and others may practical, such as the need for a new job. Women often return to college following a divorce or loss of a spouse in order to gain new job skills in order to support a family.

D. Adult Learners in College: Implications for Faculty

How can this information help college faculty members? An awareness of the heterogeneity of adult college students might remind faculty members that adult students have varying backgrounds, motivations and needs. Generally the characteristics of adults are quite different from those of the traditional-age students. College instructors may wish to address these motivations and draw on the rich experiences of adult students within the context of the course material. It is also important for college instructors to remember that attending college is certainly not the only responsibility for adult learners, and for many it's not the most important responsibility of their lives. College faculty members may want to consider an individualized approach to help adult learners to cope with potential barriers to completing coursework. If faculty members take time to familiarize themselves with the unique characteristics of adult college students, they will gain a better understanding of adult students and may therefore be better equipped to teach adult college students.

III. Studies of Adult Learning

A. Learning Capacity of Adults

Some adult learners may be under the mistaken notion that their learning capabilities have decreased with age. Adults sometimes feel threatened by the idea of competing with younger students who may be "sharper" in learning skills (Wendel, 1985, Christensen, 1980). In 1928 E.L. Thorndike disputed this notion in his book Adult Learning:

> In general, nobody under forty-five should restrain himself from trying to learn anything because of a belief or fear that he is too old to be able to learn it. Nor should he use that fear as an excuse for not learning anything which he ought to learn. If he fails in learning it, inability due directly to age will very rarely, if ever, be the reason. Adult education suffers no mystical handicap because of the age of the students (Kidd, 1973, p.21).

Kidd notes that in 1928 the age of forty-five was considered to be "old age." He suggested that we might translate Thorndike's remarks to read "...under seventy-five..." for greated accuracy today. Some adults may feel that their learning ability has decreased due to reduced vision and hearing abilities, less physical flexibility, and a decline in memory recall (Burnham, 1982). With the exception of grave illnesses which may affect the brain, learning ability does not diminish in adults -- even into old age (Burnham). The speed of processing information may become slower, but the capacity is not diminished (Knowles, 1980).

In some ways the adults may actually be better prepared for college than the younger students. The writing ability of adult students tends to be much better than younger students because adults went to high school when the basics of grammar, spelling, and composition were still emphasized (Williams, Howard, Monroe & Young, 1981). Kidd's study (1973) revealed that adults may complete their learning projects more slowly due to the fear of failure and the desire to be correct. A 1950 study of adult learners which used the Wechsler Adult Intelligence Scale showed that learning capacity increases steadily from the teens to age thirty-five. The subsequent decline is slight (Kidd). And the concerns over loss of dexterity or physical flexibility may also be unfounded. Adults may improve their dexterity through retraining and practice (Kidd). The attitude of adult learners toward the aging process might be considered simply a "dispositional barrier."

B. Preferred Learning Styles of Adults

1. Traditional Highly Structured Preference

How do adults prefer to learn? Knowles (1980) found that in spite of the self-directed activity in adults' everyday lives, previous learning experiences may cause them to become dependent when they enter a classroom again. So despite the theories of andragogy and self-directed learning, Preston's study of adult community college students (1976) showed that adults have a strong preference for the more traditional methods of instruction. Respondents stated that they preferred regular class attendance and structured assignments rather than independent work. A slight majority of the adult students preferred discussions and an unstructured style in the classroom, but female students over the age of thirty showed a strong preference for traditional lectures. A large majority stated a preference for the use of audio-visual materials in the classroom. Adult students felt that audio-visual materials helped in learning the material (Preston, Zemke & Zemke).

Another study of adult learning styles also showed the preference for structure and traditional methods (Check, 1984). Over 90 percent of the adult students surveyed preferred the lecture/discussion mode of instruction, almost 80 percent preferred a course syllabus which outlined the units to be covered, 70 percent insisted that a strict class schedule be followed, over 60 percent preferred an outline for each lecture, and over 50 percent preferred the instructor to determine the material to be covered in the class (Check).

Preston (1976) found that the younger college students were much more receptive to innovative teaching methods than the older students. The results of Daughenbaugh's (1985) study of adult students agrees with this difference between adults and younger students. Younger students preferred peer teaching and teaching games, but adults preferred independent study and discussion. Both younger students and adults disliked simulation games and drill and recitation as methods of instruction (Daughenbaugh).

2. Innovative Learner-Centered Preference

Other studies have shown that adults prefer learner-centered activities rather than instructor-centered activities. In one recent study, adult students enrolled in professional coursework for career advancement were compared with older adults who were enrolled in college classes primarily for learning enjoyment. The majority of all adult students preferred a teacher-centered learning environment. They felt that "the instructor knows best;" "instructors

should be authoritative;" and "students need structure" (Tracy & Schuttenberg, 1986). However, there were more professionals than older adults who preferred learner-centered instruction. Their attitudes were characterized by their agreement with the following ideas: "Student involvement (is necessary) in order to tailor the learning situation to meet student needs, goals, or values, or to complement students' current knowledge;" "Students want to be involved;" and "Instructor should be responsive" (Tracy & Schuttenberg).

Adult students are characterized as vastly different from younger students in their learning style preferences in other studies:

- Adults prefer autonomy; younger students prefer dependence. (Schwartz, 1985, Kasworm, 1980)
- Adults prefer an active learner role ; younger students prefer to be told what to learn. (Kasworm, Kidd, 1973)
- Adults are evenly divided in their preference for a pedagogical or andragogical learning style; younger students prefer a pedagogical style with objective exams and regular classwork assignments (Vitols, 1985).
- Adults build their identity on their experiences and feel rejected if their experience is discounted by the instructor; younger students are just beginning to obtain life experiences, and may feel that they have little to contribute to class discussions. (Kasworm, Schwartz, Richter-Antion, 1986)
- Adults want information which is applicable to their personal or professional lives immediately; younger students are attending college with the plan to use the information in a future career at a later time (Schwartz).

These generalizations are vastly different from the previous studies of adult learning preferences. Schwartz and Kasworm characterize adults as preferring more self-directed learning activities than do the other studies.

In Hughes' review of the literature of adult learning, the following generalizations also characterize adults as active learners with a self-directed style of learning:

- Adults prefer a problem-solving focus and practical learning experiences.
- Adults prefer an individual approach to instruction and methods other than lecture.
- Adults prefer that grades not only be based on tests, and that more than one way to meet course requirements be provided.
- Adults prefer instructors who are interested in progress, who are relaxed and informal

in class, who use many examples, and have a realistic view of students' outside duties. (Hughes, 1983)

3. Relevance in Learning

Relevance is extremely important to adult learners. Because many adults are working toward career enhancement, they prefer learning new theories and skills which will help them to advance in their careers. Even adults who are attending college for the pleasure of learning generally have a specific subject area in which they have interest. Most adults try to find some congruence between the material they learn in the classroom and real life situations. College faculty who address this need for relevance may make the class more meaningful for the adult learners.

It was not surprising to find that adult college students may excel in their learning activities because they choose to learn in subject areas in which they have personal or professional interests (Kidd). Adults want to learn new skills or new information which can be put to use immediately in their personal lives or in their jobs (Preston, Burnham, Wendel). The Commission on Higher Education found that adults consider themselves successful if they have mastered new competencies upon completion of the learning experience (1984). Adult students in the community college will sometimes attend a class until they have gained the knowledge or skills they desired. A Fullerton College typing teacher has discussed the problem of adult students enrolling in the typing class in order to learn the keyboard for their home computer. As soon as they feel competent with the keyboard, midway through the semester, they leave the class: they have achieved the desired competence in a new skill which is relevant.

Adults generally prefer to take classes which require verbal skills rather than math skills (Kidd). This preference may be reflect the fact that reading and writing skills are used by the majority of adults in everyday life, but the use of math skills only by those whose jobs require it.

Information which is perceived as trivial or useless may cause adults to become impatient (Wendel). For this reason adult learners prefer courses which concentrate on a single theory or skill rather than survey courses which cover a broad range of subjects (Zemke R. & Zemke S., 1981). It is very probable that a survey class covers many areas in which an adult student is not interested. This may be the reason that short seminars and workshops are so popular with adult students. A very narrow focus in a single class or workshop appeals to adults who want information on a specific subject.

Adults surveyed also perceive a greater relevance between the course material and their current occupations than do younger students (Preston). In my teaching experience I have found that both adults and younger students respond favorably to being told why the information is being covered, and the application of the information in the real world. Students of all ages want to know how they can use the information in a future career, or how the information is relevant in their personal lives.

4. Motivation to Learn

The motivation of adult learners is an important factor in achievement and learning. Adults view education as a means to an end, not as an end in itself (Zemke & Zemke, 1981). Adults are motivated by knowing that some need will be met by learning the material. Two basic types of needs which account for human motivation are the basic needs (food, shelter, clothing, pain reduction) and the needs for self-fulfillment (striving for a more fulfilling personal life or career)(Kidd). Motivation is a more emotional experience than a logical one: logical planning for a career can result in an emotional excitement about pursuing that career. I have noticed that adults and younger students who strongly feel the need for success in a career do much better in classes than those who have no specific direction or goal. Those students who are working toward a self-fulfilling future career respond particularly when the relevance of the material is shown. In the college classroom I believe we encounter more of the "strivers" than those who are attempting to fulfill basic needs. Most basic needs must be met before a person has the available time or money to attend college.

5. Similarities in Traditional-age and Adult Learning Preferences

Learners of all ages bring emotions to the learning experience which may help or hinder their motivation to learn, and thus help or hinder achievement. Three emotions which affect learning are love and respect, rage and frustration, and fear and suspicion. The only emotion which will result in a quality learning experience is love and respect (Kidd). Students become motivated if they gain respect for the instructor and for the material of the class. As a college student I was motivated most by those instructors who treated the class material with respect by showing the importance and relevance of the material, and who provided strong encouragement for students in the class. But I have also noticed that students become frustrated or angry if they perceive that the class projects are beyond their abilities, or if the instructors belittle students

or provide little encouragement.

Although the research shows only adult learning preferences, in my teaching experience I have found that the following learning preferences may apply to both adults and younger students:

- Higher achievement is the result if students know their work will be evaluated (Kidd).
- Students want immediate feedback (Kidd, Long).
- Students learn more when the teacher shows a personal interest in the achievement of the student (Wendel).
- Knowing the goals, and knowing that the goals are attainable is very important to students. If the goals seem to be unattainable, students may become discouraged, and the amount of work decreases (Long, 1983).

Some of the literature of adult learning seems to be written from a narrow perspective. Many of the needs and desires of adult students are the same for younger college students.

6. Informal Self-Directed Adult Learning

So far only formal learning has been discussed. But Kidd states that adults learn all the time in many informal situations. Kidd says "Education is planned learning" (1973, p.15). Tough's study shows that adults conduct at least one learning project each year. Eighty percent of these learning projects are self-planned, and 20 percent take place in formal academic settings (Tough, 1978). Tough's study of adult learners shows that adults are organized learners who study a defined subject area to gain knowledge in order to reach a specific personal or professional goal. This study may show the strongest support for the theory of self-directed learning within the traditional college classroom. Despite the stated preference for more traditional methods of instruction, Tough's study shows that adults do much more learning outside the classroom than they do in the formal college setting. The implications of this study should be interesting to college administrators: there may be more potential adult students in the community than we thought.

Why are these adults conducting their learning activities outside of the formal academic setting? Adults prefer flexibility, convenience, individualization, and relevance (Penland, 1977). If adults assume that colleges and universities do not meet these preferences they will continue to learn independently. However if colleges offer flexibility, convenience, individualization, and relevance, they should market these attributes of their college classes to adults in the community. If adults in the community become aware of classes which meet their

needs and satisfy their learning preferences they might be motivated to enroll in a college class rather than conduct their learning activities independently.

C. Adult Learning Preferences: Implications for Faculty

Faculty members may find the differences in the results of various studies of adult learning preferences somewhat contradictory and confusing. To find out about the adults in a particular class it may be a good idea to ascertain the expectations, motivations, and learning style preferences of the adult learners in the class at the beginning of the semester. Before starting a new lecture topic or new class project, the relevance of the material may be highlighted for adult students by the instructor. The relevant life experiences of adult students may be included in discussions for a more meaningful learning experience. And in a mixed-age classroom, similarities and differences of learning style preferences should be taken into consideration. The wide variety of learning preferences shows another aspect of the heterogeneity of the adult student population for the faculty to consider in the planning and delivery of coursework.

IV. Adult Learning Theories and Teaching Methods

A. Andragogy

Andragogy is the science of teaching adults. The difference between andragogy and pedagogy is shown in the Greek origin of the words. Knowles explains in The Adult Learner: A Neglected Species (1978, p.54): "This new theory is going under the label 'andragogy,' derived from the stem of the Greek word 'aner,' meaning man (as distinguished from boy)." The root "agogue" means leader of. The stem "paid" means child. Pedagogy refers to the authoritative technique which is generally used in teaching children. Andragogy encompasses various methods of teaching adults in which the teacher is a facilitator of learning. Knowles feels that adults are different from children because children are dependent and adults are self-directed (1973). Andragogy is different from pedagogy in that andragogy is based on the idea that adults need to be treated with respect, as self-directing individuals who have a specific educational goal. Andragogical learning is problem-centered rather than content-centered and collaborative rather than authoritative. Andragogy encourages active participation of the learner and encourages learners to introduce past experiences into the learning process. Andragogy is discovery learning, pedagogy is information-based learning (Knowles, 1984). Andragogy is student-centered and pedagogy is teacher-centered.

Adults have had many family and work responsibilities. As adults gain higher levels of responsibility, they may even become mentors to younger workers. But this level of responsibility is often ignored when adults return to college. In the college classroom professionals are often treated as if they were dependent by instructors who use a pedagogical approach (Schlossberg). In the previously mentioned studies of adult students, many adults stated that they actually preferred a pedagogical style of instruction. However, if adults are accustomed to high levels of responsibility in raising a family or in supervising others in the workplace, it may be logical to also use this sense of responsibility in the college classroom. If opportunities for responsibility are provided in college classes through the use of andragogical methods, adult students would not be forced to regress from a role of responsibility in the real world to a role of dependency in a college classroom (Schlossberg). Knowles feels that there is an internal conflict between being treated as a dependent individual and feeling a deeper psychological need to be treated as a self-directing individual. This conflict may cause adult learners to divert attention

away from the learning project (1984).

Readiness for andragogy is another issue. Do all adults behave as adults? Are adults prepared for methods of andragogical learning? Roberta Vitols' comparison of traditional-age students and adult students showed that students who were both Field Independent and Cognitively Complex preferred an andragogical learning style (Vitols, 1985). Adult students who were attending college classes primarily because of Cognitive Interest in the subject were found to be ready for self-directed learning activities (Reynolds, 1986). However, not all adults have these learning attributes. This may explain the stated preference by adults for pedagogy. In learning situations adults may prefer to be dependent, and may need some guidance toward self-directed learning.

In his book The Consummate Trainer (1986) Spaid recounts a training program in which the adult learners were given too much freedom. The learning environment was an attractive resort area. The adult learners attended a day and a half of meetings, then were given the responsibility for spending the next eight days learning independently or in clusters. Some of the learners chose to spend the time learning. Many decided that they preferred to spend time in the sun. And all of the adult learners were somewhat confused by being given so much freedom on company time. Spaid concludes that adults need structure and must be led into a self-directed andragogical learning situation gradually through preparation and practice. Knowles (1984) recommends an orientation to self-directed learning at the beginning of the class or learning activity.

Although andragogy refers to the education of adults, Knowles says that andragogical methods are beginning to be applied in elementary, secondary, and college classrooms for students who are not adults. One junior high school in New York, Central Park East Secondary School, is using andragogy in teaching basic subjects to seventh and eight grade students. Jill Herman, a humanities teacher, says, "We don't teach them to be dependent on adults and on authority figures for what they learn" (Fiske, 1986). This method of instruction is the philosophy of Brown University Education Department chairman, Theodore Sizer. Albert Shanker, president of the American Federation of Teachers agrees that younger students should be getting involved in their own learning. Shanker states that teachers should "...stop dispensing facts and focus on important things like writing and critical thinking" (Fiske).

Andragogy is a logical theory, but to be effective it must be translated into practical teaching methods. Several teaching methods incorporate the theory of andragogy to the learning experience.

1. Self-Directed Learning

In his 1926 book The Meaning of Adult Education, Eduard Lindeman advocates helping adults learn how to learn. If educators of adults become facilitators of learning, adult students will be helped toward "finding things out" (Stewart, 1985). This method leads to lifelong learning for adults in formal and informal settings. Tough sees the role of the teacher as a helper of self-directed adults in their independent learning activities (1971). Cropley (1978) believes that it is important for all students to become aware of the value of lifelong learning by being shown the relationship between learning and real life. As adults gain the skills in self-directed learning they will be able to construct their own learning projects, research the subject of interest, apply the new knowledge to a real life situation, and evaluate the learning experience (Knapper & Cropley, 1980).

Another researcher, Marsick (1985), feels that it is important for colleges and universities to provide an environment for adult students which is conducive to self-directed learning. This means that faculty and students should adjust their teaching/learning styles to an experiential problem-exploring style. A study at Onondaga Community College showed that self-directed learning is a good plan for adult learners. Tough's previously mentioned study of adult learners found that many adults complete learning projects each year which are completely self-directed. It is possible that more adults might participate in college courses if they utilized self-directed methods.

2. Learning Contracts

One form of self-directed learning is the learning contract. This method gives a practical application to the theory of andragogy. Knowles (1978) gives eight steps to be completed by the learner in developing and implementing a learning contract:

1. Diagnose your learning needs: Which abilities or areas of knowledge do you need?
2. Specify your learning objective by translating the learning needs into a specific objective.
3. Specify the learning resources and strategies: How will the learning objective be accomplished?
4. Specify evidence of accomplishment before the learning activity begins.
5. Specify how the evidence will be validated, and by whom.
6. Review your contract with consultants: resource people, supervisors, or teachers.
7. Carry out the contract.

8. Evaluate your learning by asking the consultants for feedback.

This method is particularly effective in independent study classes in which the learner has a very narrow focus or specific area of study. The learning contract may also be used by teachers applying for a sabbatical leave. For highly motivated learners who simply want to learn a subject independently, a learning contract can give the learner a method for getting organized and carrying out a learning activity.

3. Structured Inquiry

Andragogy is addressed in this method of instruction which was developed by Adkins at the Teachers College, Columbia University (1973). The Structured Inquiry method has four steps:

1. Stimulus: The students are stimulated to learn through a dynamic presentation or role-play or videotape in which a problem is demonstrated.
2. Evocation: The instructor is the facilitator of a discussion in which pre-planned questions are asked to stimulate discussion. Students responses are recorded on a flipchart.
3. Objective Inquiry: The students research the subject further by using outside sources.
4. Application: Through role-playing or in actual situations the students have an opportunity to test the new information, or to solve the problem.

In order to successfully implement this method, participants must be first surveyed for ideas or areas which may be included in the curriculum design. This method allows students the opportunity for self-directed learning within a structured program. Once the program is running the instructor has a pre-designed learning system which can free the instructor for developing more effective educational relationships with the students (Schwartz, 1985).

4. Competency-Based Education

Competency-based education involves first the assessment of competencies, the use of learning contracts, systematic feedback, a variety of learning experiences, and real-life application. This method is commonly used in corporate training and in vocational programs at the community college. However, the American Management Association program for managers is a competency-based program which also incorporates the theory of andragogy. Some of the

management skills in which competency is desirable are orgainzation skills, directing subordinates, managing groups, self confidence, and use of oral presentation (Knowles, 1984). Generally students use their skills to solve a problem or to imitate a model. This structured form of learning activity works in job-related skills, but may not be effective in liberal arts courses which require the development of ideals (Cohen, 1982).

In the AMA program, students use a learning contract to individually set goals for new competencies. In the college classroom andragogical methods may be used to construct the desired competencies, however in vocational areas certain competencies are dictated by industry. For instance, if students plan to work in video production they must learn how to operate a camera, edit videotape, record the audio track, and set up lighting equipment. Students must first be shown the skills which are necessary to obtain employment in a particular field. The students are aware of the goals, which are stated as behavioral objectives.
For this reason, in many vocational classes teachers set objectives, structure the practice exercises, and provide feedback (Laska, 1984).

5. Experiential Learning

Experiential learning gives students an opportunity to put their skills to the test in the real world. Students may do an internship, volunteer work, a part-time entry-level job, or independent field research. The University Without Walls at Loretto Heights College encourages experiential learning experiences. Many adult learners who have had considerable experience in the business world are less likely to choose an experiential learning project. However women who have been away from working for many years and younger students with little working experience are eager to obtain experiences in their chosen field through experiential learning projects (Greenberg, 1980).

The University of Waterloo requires graduate students in Management Science to learn problem-solving by working with real life clients from the local business community. The University of Waterloo Engineering area requires students to spend two of the six years of the program in a work setting related to their academic program. Students choose the work site with the assistance of an advisor, and the advisor maintains contact with the student during their outside employment (Knapper & Cropley, 1980).

In the Fullerton College Radio and Television program students are encouraged to obtain entry-level part-time positions in broadcasting while attending college. Several radio students are happy to drive to Barstow or Apple Valley for a weekend shift on the air. Other radio students

are employed by local Orange County radio stations as call-out researchers, receptionists, and board operators. Television students try to break into the industry by obtaining internships with KNBC-TV or Entertainment Tonight. Other television students who prefer hands-on experience are employed by local cable companies or video production houses. All of the students come back to the college with increased self-sufficiency, increased self-confidence, and more respect for the skills and knowledge that are required to get involved in this highly competitive industry.

Vocational programs in colleges encourage students of all ages to participate in internships or any related on-the-job experiences. Pursuing the internship is a self-directed experience in itself. Once on the job, students must rely on their skills and problem-solving ability. The more self-directed the learning experiences are in college, the easier it is for students to make the transition from the college setting to the work setting.

B. Implications for Faculty: Applying Andragogy

1. Curriculum/Program Design

The primary difference between design of a pedagogical learning experience and the design of an andragogical learning experience is a process design (andragogy) rather than a content plan (pedagogy). Learning contracts can provide structure for individual activities. But the learner can also become involved in a collaborative effort in planning a regular college class. Andragogy considers the the life experience of adults to be important and takes into consideration that adults are more self-directed and problem-centered in their approach to education. Knowles (1984) lists seven elements of a process design in which learners collaborate with instructors for an andragogical learning experience: setting the climate, and involving learners in mutual planning, diagnosing needs, formulating learning objectives, designing learning plans, carrying out learning plans, and evaluating their learning. In addition, students may give input on the sequencing of the class or the program. The programs should be sequenced for the readiness of the learner rather than sequenced by subject area.

Program design may also take into consideration the teaching/learning preferences stated by the adult learners as well as the preferences of potential learners. One study showed that the potential adult students favored lectures or formal classes as their first preference for learning, followed by on-the-job training and internships. The third preference of potential students was short-term conferences, institutes, or workshops.

Fullerton College will soon be implementing a new plan for workshops and short seminars called PDI: Professional Development Institute. PDI will provide short-term courses for the

business community and for the working adult. The courses will be located off campus in private companies, public libraries, hotels, or city offices. The programs will be designed by faculty members working together with members of the business community (Taylor, 1986). Short-term intensive workshops provide for those adults who want specific knowledge, or skills which may be used on the job immediately. PDI will utilize an andragogical approach through a collaboration in designing the program.

In planning a program it might be wise to consider the time constraints of potential adult students. The same class which is offered as a traditional semester-length class may also be offered in a modular schedule on weekends in several one-unit segments. University Continuing Education programs have been fairly successful with this approach. In the past I have enrolled in weekend seminars on educational topics. A one-unit class in which I participated was scheduled on a Friday evening, all day Saturday, and on Sunday morning. It was an excellent seminar which included lectures, discussions, reading material (distributed on Friday), and a written research paper due one month after the conclusion of the class. This is an example of andragogy in action in a class designed especially for adults: the time frame was convenient, the parking and registration was easy, it covered a specific topic efficiently and intensively, the discussions included examples from life experiences, and the research paper was a self-directed learning activity.

2. Teacher Behaviorial Traits

It is important for the teacher of adults to be supportive and positive in teaching adults. Burnham (1982), Knowles (1978), Christensen (1980), and Margolis and Bell (1984) recommend the following behavioral traits of teachers of adults which will result in a positive learning experience:

The teacher should create a classroom environment which is non-threatening, respectful, and informal to promote open communication and questions. Adult learners often feel insecure when they come back to college. Open, non-defensive communication and consistent emotional responses by the instructor will create a positive learning environment. Teachers of adults should be sensitive to be sure that they do not talk down to adults. By talking about real world applications and using examples, instructors may avoid authoritatively telling adult learners how they should do it. Adults prefer learning situations in which they are not compared openly with other students. Those who teach adults must be sensitive to the need for private consultations to discuss academic and personal problems which relate to the course material. Instructors of adults should be alert to indicators of insecurity. Positive reinforcement in the classroom is effective in

creating a non-threatening learning environment for adult students. The teacher can create a positive learning environment for adult students through sensitivity and a positive attitude in the classroom.

Margolis and Bell recommend treating the class as individuals rather than as a group. Participants will feel more important and more involved with the learning experience if their individual ideas are treated with respect. Individual differences may also be considered in the classroom, and individual barriers to learning may be considered outside the classroom. Christensen recommends for faculty members to be sensitive to the personal circumstances of adults that may affect their involvement in educational activities. Instructors may wish to consider the possibility of substituting learning experiences in the classroom for self-directed learning projects which may be completed outside the classroom.

Positive attributes of teachers of adults are listed by Mocker & Noble in behavioral terms: Teachers of adults should be able to:

- develop effective working relationships with learners.
- establish a basis for mutual respect with learners.
- recognize learners' potentiality for growth.
- reinforce positive attitudes toward learners.
- devise instructional strategies that will develop the learners' confidence.

(Mocker & Noble, 1981)

A supportive atmosphere does not mean causing students to become dependent, however. The classroom environment should not be over-protective. Students should feel that they have the opportunity to experiment and try new ideas without feeling threatened (National Association for Public..., 1973). They should also feel responsible for their learning experiences through the use of an andragogical approach.

Generally, all of the theorists recommend a positive atmosphere which will promote growth and learning in adult students. An integral part of andragogy is treating adults as adults. Instructors are encouraged to respect the life experiences, problem-solving abilities, and self-directing abilities. However, some of these behavioral traits may also be applied to the teaching of younger students. Everyone responds well to reinforcement, encouragement, positive feedback, an individualized approach, and a positive learning environment.

V. Teaching Techniques for Adult Learners

A. Questions to Consider

Some philosophical and practical questions must be answered before a decision is made about how adult learners should be taught in the college classroom.

1. Are the differences between the characteristics of adult learners and younger students really significant for faculty members?

The literature shows that there are significant differences between adults and younger students due to development stages and responsibilities. Faculty members may need information on adult students in order to teach adults more effectively. Learning about adults may provide teachers of adults with more sensitivity to the diverse needs of adult learners. As a college teacher it has been helpful to learn about the differences in the learning style preferences of adult learners. An awareness of the desire of adult learners for relevence, the concern of adult students for wasting time, the involvement of adult learners in many outside activities, and the importance of life experiences should help any college faculty member to consider the unique needs of adult students in teaching college classes for adults.

2. Are adults really so different from younger students that a different teaching technique is required?

Cyril Houle (1961) disagreed with the idea of a different teaching method for adults because he felt that adults and children used the same human process to learn. Many others have said that there are significant differences which must be addressed in the classroom, including life experience, outside responsibilities, time factors, career interests, and other motivations. Still others have theorized that the teaching techniques used in teaching students in elementary and secondary school should be changed to incorporate elements of andragogy such as self-directed learning.

3. May some of the teaching techniques which incorporate the theory of andragogy be incorporated into existing classes with little or no additional teacher training?

Some faculty members have been incorporating self-directed learning through research projects, learning contracts, and other andragogical techniques into their classes for many years.

So it is possible to incorporate andragogical methods into existing classes.

But can andragogical methods be used without additional teacher training? Some college faculty members who started as high school teachers may use a more pedagogical approach. Some professors at the university level have never received any formal training in the techniques of teaching. According to Knowles (1968), they simply emulate some of their own favorite professors. Christensen states that graduate schools have a responsibility to provide education for the teachers of adults (1980). Elementary and Secondary school teachers must complete a rigorous program and a teaching credential. But college and university professors are hired to teach based on content knowledge or the completion of a Ph.D. It would be helpful for universities to provide education in the teaching of adult students for potential future college professors as well as current college professors who wish to improve their teaching skills for adult students.

4. May some of the techniques which are currently being used in corporate training be adapted for higher education?

Classes which require the acquisition of specific skills or competencies may benefit from the well-organized methods used in corporate training programs. Vocational classes are usually thought of as competency-based classes which use methods similar to those used in corporate training. However, some traditional academic classes may also be adapted to use the competency-based style of instruction: writing, foreign language, science, history, and math.

Corporations spend a great deal of money on training, and they expect quality results in a short amount of time. For this reason, corporate trainers must have the entire class planned for the most efficient use of time and the maximum development of new competencies. All college instructors of adults should consider the time and financial committment of adults in designing classes. The time of the adult is just as important as the time of the corporation. Adults want new skills and knowledge in a short amount of time through a well-organized, well-designed program. College instructors may want to consider planning programs for adult students by utilizing some of the methods used in corporate training when appropriate.

B. Teaching Competencies for Teachers of Adults

A majority of faculty members who were surveyed in Mishler's study showed a preference for mixed age classrooms (1984). Another study of the faculty of the University of Texas, Dallas, showed that the faculty enjoyed teaching adults and had very favorable impressions of the abilities

of adult students (Galerstein & Chandler, 1982). However, Chickering said, "If you're in your early thirties with a fresh Ph.D. and a lot of book knowledge, it's rather threatening to be teaching someone who's been working in your field for years and is questioning your theories" (Williams, et al., 1981). Faculty members may wish to seek further professional development if they feel deficient in some of the teaching competencies which are commonly used in teaching adults.

1. Using Andragogy in Teaching

Instructors may want to become familiar with the concept of andragogy and the literature of andragogy. An awareness of the methods of teaching adults through the use of andragogy may lead to self-examination. Understanding andragogy will assist the instructor of adults to consider using methods of instruction which may be more relevent and more beneficial to the adult students.

An important element of andragogy is using relevent life experiences of adults within the context of the class. Eduard Lindeman said "The teacher who does not know how to elicit experience data and put it to work in problem-solving will never become a genuine adult teacher" (Stewart, 1985). LaGuardia Community College in New York seeks instructors who are capable of integrating subject matter with life and work experiences (Gordon & Kappner, 1980). Other adult learning specialists acknowledge the importance of utilizing the life experiences of adults in the classroom (Knowles, 1978).

Andragogical methods may be used to develop creative thinking skills in adult learners. Brainstorming, role-playing and problem-solving may cause an adult learner to think about subjects and issues with new insight. Creative thinking skills may help adult learners to prevent previous life experiences from creating blocks which interfere with problem-solving (Brown, 1985).

Blending andragogy with pedagogy may be beneficial for students who are more comfortable with pedagogical methods. "...instructors might introduce material through the lecture (pedagogical), but then have learners apply their knowledge and skills in a simulation game (andragogical)" (Davenport & Davenport, 1985).

2. Utilizing Methods which Require Active Participation

Activities should promote learner involvement through experiences and inquiry (Knowles, 1978). Students may actively participate in discussions and in written projects. But there are other class activities which promote learning through doing: an analysis of case histories,

problem-solving activities, practice of new skills, simulations and role playing activities, or field trips and work experience. Providing experiences for active involvement in the completion of a task may give a subject area far more relevence in the mind of an adult learner than simply reading about it or discussing it. Discussions following the learning activity may give adult students an opportunity to review the outcome of the activity, or a chance to compare the outcome with others in the class. Giving students an opportunity to participate in a realistic situation, even if it is simulated, may make the students appreciate the complexity of the decision-making or problem-solving process, or the difficulty of a new skill. Active learning gives learner the opportunity to apply theory to practical skills.

3. Discussion and Listening Skills

Andragogy requires teachers of adults to be facilitators of learning. This means knowing when to stop talking and start listening. Discussions may be structured or unstructured by the facilitator, but the students should do the majority of the talking. For some instructors this may mean setting the ego aside in class in order to facilitate a discussion. Evidence of a runaway ego in an instructor may include any or all of the following characteristics: "insisting his way is the only way, taking offense at any objections from the audience, relentlessly pounding her own agenda, taking a paternalistic posture toward learners, jumping in with unnecessary interventions, and never knowing when to shut up" (Spaid, 1986, p.97).

Discussion-leading skills include the ability to encourage students to give opinions, feedback, ideas, or advice (Duffy & Fendt, 1984). To facilitate a good discussion the instructor must create a comfortable, non-threatening environment for the participants. The facilitator must be an active listener who is able to draw out even more information when necessary. A good facilitator may be able to lead a discussion in which everyone participates, rather than one in which one or two students dominate the discussion.

Some successful techniques for leading discussions are described by J.B. Cornwall: saying "Say more about that" or "And how do you feel about that?", offering provocative comments, stories and questions, nodding, and reaching toward students with hand open and palm up as though beckoning the student to continue talking (1979).

4. Teaching Students to Teach Themselves

Those who teach adults should be able to teach adults to be self-directed learners. According

to the literature, this means involving the learner in the learning activity. The learner generally requires some training in self-directed learning. Through the guidance of an experienced instructor, adults may learn how to plan their own learning projects, carry out the learning project, and evaluate the learning experience. Even traditional lecture classes may include self-directed learning projects: research papers, outside lab work, interview projects, internships, and any form of creative research project which requires the use of critical thinking skills. The most valuable skill a student may gain in a college class is learning how to learn. This learning skill opens up all of the doors to obtaining any new skills or knowledge which may be required in the future.

5. Teaching Students to Teach Each Other

As a faculty member I have discovered that I have learned much more about the broadcast industry from teaching about it than I learned while I was employed in broadcasting! Instructors must be able to understand the subject fully in order to explain it to students. It seems reasonable that if students were given the responsibility of presenting material to a class, they would also learn more than they would as a passive student. Presenting information within a class may be done on a formal basis in the form of a speech or presentation. However an informal method may be more effective and less threatening to the student. Students in smaller discussion groups may take the responsibility for presenting a particular subject area to the group. Students in a lab class may take turns demonstrating methods of completing certain projects. An instructor may wish to encourage students who are more experienced to help other less experienced students. By being forced to explain the material and answer questions, even on a one-on-one basis, the student who is "teaching" will learn even more.

6. Lecture Skills

Lectures must be used sometimes in delivering new information before a discussion can take place. The teacher of adults should be aware of the attributes of lecturers which are positive: plenty of interesting examples to illustrate theory, colorful and persuasive language, a well-organized pattern of ideas, a single theme for each lecture, and a pleasant and stimulating voice (Laird, 1978). Supplementing lectures with visual aids gives a new dimension to the lecture which may make the material more interesting.

7. Demonstration Skills

Demonstrations are another form of lecture with illustration. Before a demonstration, the lecturer may want to take the following steps to ensure a successful demonstration: having all materials in place, checking the operation of equipment before starting, positioning the demonstration so that all students will be able to see, explaining the reasons for the demonstration, presentation of the demonstration in small sequential steps with explanation, and getting the students involved in trying out the demonstrated skill (Laird).

8. The Ability to Utilize Audio Visual Aids

Videotapes, audio tapes, slides, films, and overhead transparencies give an added dimension to a lecture, demonstration, or discussion. A sequence of slides may visually depict a procedure or a new skill before the procedure is demonstrated in class. A videotape or film may show a dramatization of a social problem which will be discussed. An audio tape may be the only way a student would hear radio reports of news events from the 1930's. And an overhead transparency may show students charts and graphs or the structure of the lecture or discussion.

The National Association for Public Continuing and Adult Education advises teachers of adults: "Research shows that learners tend to remember about 30 percent of the information that is orally transmited...When oral and visual means are combined with an opportunity to discuss the information with other learners -- 90 percent of the information is retained" (1970, p.13). Adults who were born after 1948 have grown up with television. Younger college students have spent even more time watching television, and are even more visually oriented. Because so many students require a picture of the problem or the new idea or the new procedure it may be wise to consider adding visual elements to a class. Instructors may want to be careful not to add visual elements to entertain the students, but rather to provide a visual image of the subject. It is important to follow the visual material with a discussion, or to stop the audio or visual material to interject comments or ask questions of the students. As an instructor I have found that students often refer back to visual examples during class discussions and even in written examinations. In a visual world, instructors of college students should consider the advantages to offering visual examples for students who learn visually.

9. Willingness to Consult with Students Outside of Class

Teachers of adults may also need to offer support and extra time to adult learners outside of

class (Knowles, 1978). Adult students appreciate an instructor's personal interest. The key to a good consultation is listening to the student without interjecting comments or answers, being aware of non-verbal cues, and drawing the student out by asking for clarification (National Association for Public..., 1970). If an adult student seems to be having difficulties in the class, a friendly, informal conversation may bring out the problem and some workable solutions.

If a student is having difficulties in understanding the material or gaining the new skill, some after-class "tutoring" may bring the student up to the level of the rest of the class and may prevent the student from dropping the class. I know of one instructor who had a weekly appointment outside of class with a blind adult student. The student was frustrated because she was not learning to operate an audio control board as quickly as the other (sighted) students in the audio class. Through the extra sessions outside of class, the blind student was able to attain the skill level of the rest of the class in only a few weeks. The instructor was not required to spend the extra time with the student, but she had a strong desire to see the student succeed. The instructor also felt that the student would be less likely to hold back the rest of the class if she were given some extra coaching at the beginining of the semester. A postscript: the blind student is now on the air as a disc jockey, and operates all of the audio equipment with confidence.

10. The ability to handle work detail in an orderly manner to develop course objectives and organized lesson plans.

Adults prefer classes which are structured and well-organized. Organization includes using valuable class time efficiently, evaluating papers or projects quickly for immediate feedback, planning a realistic schedule for the class so that material is covered in an adequate amount of time, and arranging for additional elements of a class such as visual aids, handouts, and guest speakers. Because adult students must make an effort to allow enough time to participate in a college class, they prefer that the time in class is not wasted. An orderly structure in a syllabus shows the adult students that time will not be wasted because this class has been carefully planned.

C. Corporate Training

Corporate training is an important part of business today. The Carnegie Report on corporate training states that corporations spend nearly $60 billion each year on education and training. That figure represents about the same amount spent on education in the nation's four-year colleges and universities (Naisbitt & Aburdene, 1985). The majority of training is done by corporations

in the information business. Business-related subjects are the most common in corporate training, although several large corporations offer college degree programs within the company.

Why are so many corporations involved in training? Competition! If the sales force of one company is better trained than that of a competing company, training may pay off through increased sales revenue. If training provides greater skills and greater efficiency, production will be greater and profits will be higher. The utilization of training must be successful, otherwise companies would find more productive ways to invest their money.

Training in corporations is designed for expediency. Many must be trained for high performance in a short amount of time. It might be difficult to adapt skills used to train a specific skill to a college class which may be more broad in its goals. However, higher education may wish to consider some of the following methods commonly used in corporate training today.

1. Behavioral Objectives

Some of the techniques used in corporate training apply easily for areas which require the learner to become competent in a specific skill. These areas might include any vocational areas, computer science, writing classes, language classes, business classes, physical education, art, and performance areas such as theater and music.

Behavioral objectives give the learner a specific goal in the learning activity. The goal might be the mastery of a skill or the mastery of a specific subject area. Objectives should contain an observable action, a measurable criterion, or the conditions of performance. Behavioral objectives should be able to be stated "Upon completion of this course (workshop, training session, etc.), the learner will be able to..." Learning objectives may be written for any age group, but they are particularly important for adult learners. Adults are goal-oriented and prefer not to waste time. By providing written learning objectives, "adults will know precisely what is expected of them and are more inclined to invest energy in pursuit of the goal" (Laird, 1978).

Behavioral objectives may be written when a specific outcome is desired. However, when the purpose of a discussion seminar is "to gain appreciation of..." or "to consider the differences of...", it is somewhat more difficult and undesirable to plan a predicted outcome. For instance, in a history class a behavioral objective might be: "Upon completion of this course a student will be able to recite the names of all of the Presidents of the United States." However a philosophy class or an ethics class or a sociology or psychology class may not have a specific outcome which may be expressed in terms of behavioral objectives. Zemke and Zemke state that "a skill-training task

can draw much from the behavioral approach, for example, while personal growth-centered subjects seem to draw gainfully from humanistic concepts" (1981).

The behavioral objectives give adult learners an opportunity to gain a clear picture of the goal of the course (Spaid). An instructor may wish to consider, when possible, a visual demonstration of the intended outcome: a skilled operator using a word processor, a research paper which is written correctly, or a radio disc jockey operating audio equipment. The demonstration of the outcome could be a live demonstration, an example on paper, an audio tape, or a video or slide presentation. Once the adult learner sees the picture of the desired outcome, the teaching process is much easier. Because adults desire relevance, seeing the desired outcome or goal makes the steps leading to the goal more relevant.

2. Technological Aids

Microcomputers and videocassettes were being used in corporate classrooms long before they were in the college classroom. New technology can sometimes be too expensive for colleges and universities which have fixed budgets. However, universities may wish to examine the technologies being used in business today in order to plan to use the technology in the university classroom as soon as possible. If funding simply does not permit the purchase of such equipment, the college or university might consider a partnership with a local corporation in which college students may be allowed to learn about the new technology at the corporation.

A form of new technology currently being used by corporations is the satellite delivery of courses. The 1985 Carnegie report describes the non-campus program offered by National Technology University in Fort Collins, Colorado. Classes and programs are beamed by satellite to corporate classrooms in all parts of the country; to IBM, RCA, Digital Corporation, and Westinghouse (Boyer, 1986). Several consortia of colleges and universities also exist for the exchange of telecourses through the use of satellite delivery. The use of satellites for the delivery of courses is a reality today. Whether or not it is the most desirable or appropriate method for instructing students is an issue which must be decided by the individual corporation or university.

3. A Variety of Teaching Methods

According to the Carnegie Report, Corporate Classrooms, corporate training utilizes "a much broader range of teaching-learning techniques...than in the conventional classroom" (Eurich, 1985, p.53). Instructional methods may include conventional lectures, discussions, and

audio visual materials. But other methods are also used when appropriate: individual self-studies, case studies, role plays, simulations, computer-assisted instruction, programmed materials, and computer networks that link voice, graphics, text, motion, and audio. The method of instruction is chosen according to its appropriateness to the type of training to be conducted. Colleges and university instructors may want to consider choosing the instructional delivery method according to the subject and the goals for the class, rather than using primarily lecture and discussion to teach most subjects.

4. Instructional Efficiency

Corporate training departments are not limited to three-unit classes which meet for sixteen weeks. The training calender is year-round and has much more flexibility than the typical college. Courses may begin and end at any time of the year. The length of the course is determined by the amount of material to be covered, and the need for covering the material. A corporate training course may last several hours, a full day, a full week at a training facility, several hours each week for several weeks, or a full year. Convenience is the determining factor in deciding when a course is to be offered, whether it will be part-time during work hours or an intensive course during which participants do not work, and the length and location of the training.

5. Decisions Before Determining Training Method and Location

Corporations generally consider many reasons for the training and the attributes of the trainees before deciding on the design of the training program. Mangum (1984) lists the following Evans, Holter & Stern criteria which may aid a corporation in deciding whether training should be on the job or in a classroom: Institution-related criteria (costs, availability of trained personnel to conduct the training, availability of physical resources), Quantity and Speed-related criteria (number of employees to be trained, the need to minimize training time), Competency-related criteria (how often will the skill be used, how difficult is the task to learn), Trainee-related criteria (prior experience, aptitudes, disabilities of trainees), and Other Criteria (length of time between training and use of skill, will training be used as a screening device for trainees). By considering the reasons for the training and other related factors carefully before the training begins, corporations are able to identify the benefits and costs of the training more accurately than universities which may not do such extensive planning.

6. Strategies to Ensure Effectiveness of Training

Two strategies which increase the effectiveness of the training after the training has been completed are journal writing during the training and the formation of support groups for discussion after the training (Kruger & May, 1985).

The typed, revised journals are submitted to the instructor at the end of the course. The instructor then copies and mails the journal entries of one student to all of the former students each week. Through the review of another student's journal after the course, each student relives the course and may gain new insights by reading the journal of another student. Each week a different student's journal entry for one week is sent to all former participants, so all points of view are seen. This reinforcement reminds the former students to utilize the new management skills on the job (Kruger & May).

The support groups enable former students to remain in contact with the other students in the class upon completion of the class. A team leader is designated to get a small group together to discuss problems or ideas on the job which relate to the course which had been completed.

The purpose of both methods is to reinforce the ideas and skills which were a part of a class. This is particularly appropriate when the material is directly applicapable to a current job. Colleges and universities could consider using a similar approach in vocational areas, and in graduate professional schools.

D. Implications for Faculty

College and university faculty members may benefit through an examination of the differences of adult students and the various teaching competencies. Faculty members may also want to consider reviewing the methods used to design and implement corporate training programs. In some subject areas the use of different teaching techniques or a different method of course delivery may be beneficial. An awareness of the variety of teaching methods may cause faculty members to become more creative in the way that they approach a class for adult students.

VI. Summary and Recommendations: Retraining or Status Quo?

Some institutions may feel that adult students do not need to receive instruction which is different from instruction used in teaching younger college students. The study of adult students at the University of Texas, Dallas, concluded that because faculty members enjoyed teaching adults in a mixed-age classroom, and because the faculty members made no attempt to change their teaching techniques for the adults, a change in teaching method was not necessary (Galerstein and Chandler, 1982).

Some institutions may agree that adults need a different style of teaching, but prefer to ignore the idea that their faculty may not be well-equipped to teach the new adult student population. Some institutions may feel that those faculty members who want further professional development in teaching adult students are offered sufficient incentive on the salary schedule to take some education classes on their own.

But those institutions who are concerned with the consistent quality of teaching, and the use of innovative techniques in the college classroom may want to consider a program of retraining for faculty members. Upon conclusion of a study of non-traditional adult students, Dugan concluded that a course to improve college teaching should be seriously considered by administration and teaching faculty (1985). Malcolm Knowles (1984) stated that "most teachers know only the pedagogical model; they have no idea about how adults learn. Therefore faculty training is crucial to the successful implementation of the andragogical model" (p.419). Retraining need not have negative implications. Instead, a retraining project would show the faculty members that the institution is concerned about excellence in teaching. Faculty members are proud to be associated with any institution which promotes excellence.

Mercy College in New York had a very successful experience with a series of faculty workshops from 1981 through 1983. The goal of the faculty training program was to retrain faculty members to teach adult students by creating a learning environment which reflected the learning needs of adult students. Faculty members were provided with information of current adult learning theory and methods of facilitating adult learning and persistence. Malcolm Knowles was the facilitator of the workshops. The first workshop was a full day on a Saturday, and the subsequent workshops were held once a month on Friday afternoons. Knowles utilized andragogical methods in conducting the workshops, allowing the faculty members to assess their learning needs

and to participate in the design and implementation of the program of workshops. The tangible results of this series of faculty workshops included the following: the creation of a new class for the orientation of new adult students; the modification of nine introductory courses in English, psychology, speech, math, philosophy, and education by utilizing andragogical methods; parallel scheduling of classes so that the same classes are offered in the day and evening, taught by the same instructor, so students with varying work schedules could choose to attend the day section or the evening section of the same class; eight-week terms with classes on two nights, rather than the traditional sixteen-week semester with a class once each week; and five extension centers were opened for more convenience. The enrollment grew from 1,500 to more than 9,500 (Coe, Rubenzahl & Slater, 1984).

The only problem an institution might encounter is convincing the faculty that change is necessary. Conservative faculty members may not be convinced until there is evidence to show that the andragogical teaching methods produce superior results. It seems ironic that an institution or the faculty of an institution which is in the business of education must be convinced before seeing the desirability of retraining!

If the entire faculty will not go along with the proposed retraining and different teaching methods, it might be wiser to begin with a select group of enthusiastic, innovative, forward-looking instructors in a variety of disciplines. LaGuardia Community College in New York found that instructors in the "Alternative Degree Program" for adults had a difficult time in the role transition from "teacher" to "mentor." Even highly motivated and skilled faculty members needed orientation, assistance, and consistent organizational support from the college (Gordon & Kappner, 1980). If a select group of faculty were trained to handle adult students, and their classes were marketed specifically for adults, the rest of the faculty would be able to observe the success (or failure) of the special classes. If students vote in favor of these classes through increased enrollment, the more conservative faculty members may eventually be persuaded to go along with the new methods for reasons of survival.

Depending on time and budget constraints, retraining of faculty may take several forms:

1. A series of short regularly scheduled workshops on adult development theory in which faculty members become aware of the differences in characteristics of adult learners (Richter-Antion, 1986, Knowles, 1984).
2. A more intensive retraining program over several different one or two week periods in between semesters, or at the end of the summer break just before the new semester. A

program of greater length would allow for more discussion, demonstration, and practice of teaching techniques.

3. A program of self-directed learning in which the faculty members can retrain themselves through research, observation, visits to corporate training sites, or other methods. This method may be more meaningful if there is a forum for a discussion of the findings, or if combined with one of the other options listed above.
4. A recommendation for all faculty to take graduate courses on adult learning at a local university, or to attend conferences and workshops on the adult learner, with reimbursement for tuition and fees when possible (Christensen, 1980).
5. A "growth contract" designed by each faculty member who feels the need for professional growth. (Knowles, 1984)
5. An organized "orientation" program for all new faculty members which includes information about adult learners and practice in utilizing teaching techniques for adult learners.

Any program of retraining in the methodology of teaching adults would be beneficial for the faculty. Retraining can provide a sense of unity in the faculty. The "street talk" on campus might become centered on the issue of adult learning if all faculty are involved. And ultimately the adult students would benefit through greater attention to their special needs.

In Higher Learning, Derek Bok, president of Harvard University, gives the following observations on innovation in institutions of higher education:

> " There is no ideal system now, nor will there be one in the future that can force every institution to work as conscientiously as it should to improve its educational programs. The impetus must come from within. Boards of trustees must look for presidents who share a concern for the quality of education and then provide them with an administrative structure that will allow them to exercise academic leadership. Presidents must take the initiative to articulate educational goals while providing the encouragement and material support to persuade faculty members to join in making needed improvements. Above all, faculties must regard the process of learning as an absorbing subject in its own right, worthy of continuing discussion, reflection, and experimentation" (1986, p.200).

The population of adult students at Fullerton College may grow as a result of more adults becoming interested in learning. Institutional changes which make it more convenient for adults to enroll in classes may also encourage adults to enroll. However, the faculty members play a major part for adult learners once they're in the classroom. It is possible that retraining the faculty to teach adult learners more effectively would result in better retention among adult learners, and a more positive learning experience for adults. Through retraining, everybody wins: the faculty, the institution, and, most importantly, the adult students.

REFERENCES

Adkins, W.R. (1973). Life Skills education for adult learners. Adult Leadership, 22, pp.55-58, 82.

Anderson, R.E. & Darkenwald, G.G. (1979). The Adult Part-Time Learner in Colleges and Universities: A Clientele Analysis. Research in Higher Education, 10(4), pp.357-370.

Astin, A. (1984, Winter). A Look at Pluralism in the Contemporary Student Population. NASPA Journal, 21, pp. 1-11.

Bok, D. (1986). Higher Learning. Cambridge, Massachusetts: Harvard University Press.

Boyer, E. (1986, Aug/Sept.). Toward the Year 2000 and Beyond. Community and Junior College Journal, pp.14-20.

Brown, H.W. (1985, May). Lateral Thinking and Andragogy: Improving Problem-Solving in Adulthood. Lifelong Learning, 8, pp.22-25+.

Burnham, L. (1982, November). Adults: Not Grown Up Children. Community and Junior College Journal, pp. 22-26+.

Cetron, M. (1985). Schools of the Future. New York: McGraw-Hill Publishers.

Change in America. (1986, September 17). The Chronicle of Higher Education, p.1.

Check, J. (1984). Teaching-Learning Preferences of the Adult Learner. Paper presented at the National Adult Education Conference, Louisville, Kentucky, November, 1984.

Christensen, F. (1980). Equipping Faculty to Serve Lifelong Learners. New Directions for Community Colleges, 29, pp. 23-29.

Coe, M., Rubenzahl, A., & Slater, V. (1984). Helping Adults Reenter College. In Knowles, M. (ed.) Andragogy in Action, San Francisco: Jossey-Bass, pp.121-130.

Cohn, A.M. & Brawer, F.B. (1982). The American Community College. San Francisco: Jossey-Bass.

College Enrollment on the Brink of Decline. (1986, February). American Demographics, p. 58.

Cornwall, J.B. (1979, May). Stimulating and Managing Participation in class. Reprinted from Training in Jones, P. (ed.)(1982) Adult Learning in Your Classroom. Minneapolis: Lakewood Publishing.

Cropley, A.J. (1978). Some guidelines for the reform of school curricula in the perspective of lifelong education. International Review of Education, 24, pp.21-33.

Cross, K.P. (1983, Spring). The Impact of Changing Student Populations on Community Colleges. Community College Review, 10, pp.30-34.

Cross, K.P. (1981). Adults as Learners: Increasing Participation and Facilitating Learning. San Francisco: Jossey-Bass.

Daughenbaugh, B.J. (1985). Adult College Student's Preferences for Teaching Styles, Dissertation Abstracts International, 46 (12), 1986: 3567-A (State University of New York at Buffalo).

Devenport, J. & Devenport, J.H. (1985, Sept.). Andragogical-Pedagogical Orientations of Adult Learners: Research Results and Practice Recommendations. Lifelong Learning, 9, pp.6-8.

Duffy, K.L. & Fendt, P.F. (1984, Summer). Trends in Adult Learning: Implications for Community College Educators. Community College Review, 12, pp.41-47.

Dugan, P.A. (1985). Non-traditional and Traditional Student Learning Characteristics Relating to Class Size at the University Level. Dissertation Abstracts International, 46(09), 1986: 2520-A (Cornell University).

Eurich, N.P. (1985). Corporate Classrooms. Princeton, N.J.: The Carnegie Foundation for the Advancement of Teaching.

Fisher-Thompson, J. & Kuhn, J.A. (1981). Re-entry Women: Relevant Statistics. Field Evaluation Draft, Washington, D.C.: Association of American Colleges.

Fiske, E.B. (1986, November 9). High Schools Are His Laboratories. The New York Times, Education Life, Section 12, pp.50-56.

Frankel M. T. & Gerald, D. E. (1982). Projections of education statistics to 1990-91, Vol. I. Washington, D.C.: National Center for Education Statictics, U.S. Dept. of Education.

Fullerton College Fall Semester Active Enrollment Report. (1980).

Fullerton College Fall Semester Active Enrollment Report. (1986).

Galerstein, C. & Chandler, J.M. (1982, Summer). Faculty Attitudes toward Adult Students. Improving College and University Teaching, 30 (3), pp.133-137.

Gordon, S. & Kappner, A. (1980). Who is the Lifelong Learner? New Directions for Community Colleges, 29, pp.1-9.

Graham, S. (1985, March). Factors Related to Educational Participation among Adults. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Chicago, Illinois.

Greenberg, E. (1980). The University Without Walls Program at Loretto Heights College: Individualization for Adults. New Directions for Higher Education, 29, pp.47-61.

Houle, C.O. (1961). The Inquiring Mind. Madison: University of Wisconsin Press.

Hu, M. (1985, Spring). Determining the Needs and Attitudes of Non-Traditional Students. College and University, pp. 201-209.

Hughes, R. (1983, Winter). The Non-Traditional Student in Higher Education: A Synthesis of the Literature. NASPA Journal, 20, pp.51-64.

Iovacchini, E.V., Hall, L.M. & Hengstler, D.D. (1985, Fall). Going Back to College: Some Differences Between Adult Students and Traditional Students. College and University, pp. 43-54.

Jones, P. (ed.) (1982) Adult Learning in Your Classroom. Minneapolis: Lakewood Publishing.

Kasworm, C.E. (1980). The Older Student as Undergraduate. Adult Education, 31, pp.30-47.

Kidd, J.R. (1973). How Adults Learn. New York: Association Press.

Knapper, C.K. & Cropley, A.J. (1980). Lifelong Learning and Higher Education: Implications for Teachers. Paper presented at the International Conference of Improving University Teaching, Lausanne, Switzerland, July 9-12, 1980.

Knowles, M. (1968). Andragogy not Pedagogy! Adult Leadership, 16, pp. 350-386.

Knowles, M. (1978). The Adult Learner: A Neglected Species. Houston: Gulf Publishing Company.

Knowles, M. (1979). From an address delivered at the Adult Education Association/USA meeting, Boston, Massachusetts. Unpublished manuscript.

Knowles, M. (1980). The Modern Practice of Adult Education: From Pedagogy to Andragogy, rev. ed. Chicago: Follett.

Knowles, M. (1984). Andragogy in Action. San Francisco: Jossey-Bass.

Kruger, M.J. & May, G.D. (1985, October). Two techniques to ensure that Training Programs remain effective. Personnel Journal, pp.70-75.

Laird, D. (1978). Approaches to Training and Development. Menlo Park, Calif.: Addison-Wesley.

Laska, J.A. (1984, June). The Four Basic Methods of Instruction. Educational Technology, pp.42-45.

Long, H.B. (1983). Adult Learning: Research and Practice. New York: Cambridge Press.

Magarrell, J. (1981, May 4). The Enrollment Boom Among Older Americans: 1 in 3 College Students is Now over 25 Years Old. The Chronicle of Higher Education, p.3.

Mangum, S.L. (1984, Spring). Some evidence on criteria for choosing among alternative training techniques. Journal of Vocational Education Research, 9, pp.49-57.

Margolis, F.H. & Bell, C.R. (1984). Managing the Learning Process. Minneapolis: Lakewood Books.

Marsick, V.J. (1985). Working with Adult Learners in Higher Education: Going Against Internalized Norms. Paper presented at the Conference of the American Association for Adult and Continuing Education, Milwaukee, Wisconsin, November, 1985.

Mishler, C. (1984). Faculty and Student Attitudes toward the Mixed-Age College Class. Study conducted at Wisconsin University, Green Bay.

Mocker, D.W. & Noble, E. (1981). Training Part-Time Instructional Staff. In Grabowski, S.M. (ed.) Preparing Educators of Adults. San Francisco: Jossey-Bass, pp.39-47.

Morstain, B.R. & Smart, J.C. (November/December 1977). A Motivational Typology of Adult Learners. Journal of Higher Education, pp.665-679.

Naisbitt, J. & Aburdene, P. (1985). Re-inventing the Corporation. New York: Warner Books, Inc.

National Association for Public Continuing and Adult Education. (1970). The Second Treasury of Techniques for Teaching Adults. Washington, D.C.

National Association for Public Continuing and Adult Education. (1973). A Treasury of Techniques for Teaching Adults. Washington, D.C.

Parelius, A. P. (1979). Age Inequality in Educational Opportunity: The Needs of Adult Students in Higher Education. Adult Education, 29(3), pp. 180-193.

Penland, P.R. (1977). Individual Self-Planned Learning in America. Final report of project 475AH60058 under grant no. 0007603327, U.S. Office of Education, Office of Libraries and Learning Resources, Pittsburgh: Graduate School of Library and Information Sciences, University of Pittsburgh.

Preston, W. G. (1976). Adults as Regular Community College Students: A Comparative Analysis of Some of their Characteristics and Perceptions and Those of College-Age Students. Pleasant Hill, Calif.: Diablo Valley College study.

Reynolds, M.M. (1986). The Self-Directedness and Motivational Orientation of Adult Part-Time Students at a Community College. Dissertation Abstracts International, 46 (12), 1986: 3571-A. (Syracuse University, 1985)

Richter-Antion, D. (1986, Winter). Qualitative Differences Betwen Adult and Younger Students. NASPA Journal, 23, pp.58-62.

Russ-Eft, D.F., & Steel, L.M. (1980). Contribution of Education to Adults' Quality of Life. Educational Gerontology, 5, pp. 189-209.

Schlossberg, N. (1984). Caught in a Dilemma: Adults as Learners. Unpublished paper.

Schwartz, Y.K. (1985). Undergraduates as Adult Communicators: A Life Skills Model or Curriculum Change. Paper presented at the Annual Meeting of the Speech Communication Association, Denver, Colorado, November 7-10, 1985.

Sewall, T. J. (1986). Nontraditionals in a Traditional Setting: Why Older Adults Return to College. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, April 1986.

Solmon, L.C. & Gordon, J.J. (1981). The Characteristics and Needs of Adults in Postsecondary Education. Lexington, Mass.: Lexington Books.

Spaid, O.A. (1986). The Consummate Trainer. Englewood Cliffs, N.J.: Prentice-Hall.

Stewart, D.W. (1985). Eduard Lindeman's Agenda for Adult Educators. Speech at Annual Meeting of the American Association for Adult and Continuing Education (AAACE), Milwaukee, Wisconsin, November 8, 1985.

Taylor, L. (1986, May). A Proposal for encouraging the development of new modes of instructional delivery in the North Orange County Community College District.

Tough, A. (1971). The Adult's Learning Projects. Toronto: Ontario Institute for Studies in Education.

Tough, A. (1978). Major Efforts: Recent Research and Future Directions. In K.P. Cross and others (Eds.), The Adult Learner: Current Issues in Higher Education, 1978. Washington, D.C.: American Association for Higher Education.

Tracy, S.J., & Schuttenberg, E.M. (1986, Spring). Exploring Adult Learners' Rationales for Course Interaction Preferences. Adult Education Quarterly, 36, pp. 142-156.

Vitols, R. M. (1985). Learning Style Preferences of Traditional Age Versus Re-entry Age Female Undergraduates. Dissertation Abstracts International, 46 (9), 1986: 2526A (Claremont Graduate School).

Weathersby, R. (1977). A Developmental Perspective on Adults' Use of Formal Education. Unpublished doctoral dissertation, Harvard University.

Wendel, R. (1985, Fall). Teacher Education and the Adult Learner. College Student Journal, 19, pp. 325-328.

Williams, D., Howard, L., Monroe, S., & Young, J. (1981, December 21). Grownups on Campus. Newsweek, pp. 72-74.

Zemke, R. & Zemke, S. (1981, June). 30 Things We Know For Sure About Adult Learning. Abstracted from: Training: The Magazine of Human Resources Development, Innovation Abstracts, 6, (8), March 1984.

ERIC Clearinghouse for
Junior Colleges FEB 27 1987